

Eventlabel	JUB2010_sel_a_m_10
Campaign	King George Island 2010
Species	Southern elephant seal ( <i>Mirounga leonina</i> )
Age	Adult; >6 years ~9
Sex	Male
Number	
Length	4210 cm
Girth	
Weight [estimated]	1900
Weight [calculated]	2064 kg <a href="http://doi.pangaea.de/10.1594/PANGAEA.737046">http://doi.pangaea.de/10.1594/PANGAEA.737046</a>
Weight [measured]	
ARGOS PTT ID	96505
Transmitter type	SMRU/Series 9000 SRDL/CTD
Manufacturer	SMRU
PTT Serial Number	11280
PTT Software	Software specification for CTD_GEN_07B deployment (MEOP: Temp+Salinity share 2 tx)
Setting protocol	<div>Transmitting via ARGOS</div> <div>Page transmission sequences:</div> <div>Until day 1464: 0 0 1 0 0 2 3 0 0 4 5 using 1 PTT numbers</div> <div>Satellite availability (UTC):</div> <div><div>00: -- on --</div><div>01: -- on --</div><div>02: -- on --</div><div>03: -- on --</div><div>04: -- on --</div><div>05: -- on --</div><div>06: -- on --</div><div>07: -- on --</div><div>08: -- on --</div><div>09: -- on --</div><div>10: -- on --</div><div>11: -- on --</div><div>12: -- on --</div><div>13: -- on --</div><div>14: -- on --</div><div>15: -- on --</div><div>16: -- on --</div><div>17: -- on --</div><div>18: -- on --</div><div>19: -- on --</div><div>20: -- on --</div><div>21: -- on --</div><div>22: -- on --</div><div>23: -- on --</div></div> <div>Transmission targets:</div> <div>56000 transmissions after 365 days</div> <div>In Haulouts: ON (one tx every 1 min 20 secs) for first 5 hours then cycling OFF for 6 hours, ON for 1 hour</div>

	<p>Check sensors every 4 secs  When near surface (shallower than 10m), check wet/dry every 1 sec  Consider wet/dry sensor failed if wet for 7 days or dry for 99 days  Dives start when wet and below 6m for 8 secs  and end when above 6m for 0, or dry at any time  No separation of 'Deep' dives  A cruise begins if there has been no dive for 9 mins  A haulout begins when dry for 10 mins  and ends when wet for 40 secs</p> <p>Dive shape (normal dives):  4 points per dive using broken-stick algorithm</p> <p>Dive shape (deep dives):  none</p> <p>CTD upcasts: max 2000 dbar up to 6 dbar in 2 dbar bins.  17 cut points per profile  Send the deepest 1 upcasts in each 6-hour period.  Minimum depth to trigger collection of cast:  1000m in hour 1  600m in hour 2  300m in hour 3  100m in hour 4  50m in hour 5  25m in hour 6  or 20% greater than current maximum.</p> <p>Sample CTD sensor every 1 seconds.  Temperature: Collected, Stored. Valid range: -2.5 to 30.2</p> <p>degC</p> <p>Conductivity: Collected, Not stored.  Salinity: Calculated, Stored. Valid range: 28.9 to 37.1</p> <p>No GPS data</p> <p>TRANSMISSION BUFFERS (in RAM):  Dive in groups of 3 (6.25 days @ 10mins/dive): 300 = 1200 bytes  No 'deep' dives  Haulout: 30 = 120 bytes  6-hour summaries in groups of 3 (7.5 days): 10 = 40 bytes  No berniegrams  No timelines  Cruise: 30 = 120 bytes  No diving periods  No spot depths  No emergence records  No Duration histograms  No Max depth histograms  CTD casts (7.5 days): 30 = 120 bytes  No GPS fixes</p> <p>TOTAL 1600 bytes (of about 21000 available)</p> <p>MAIN BUFFERS (in 6.2 Mb Flash):  Dive in groups of 3 (416.667 days @ 10mins/dive): 20000 x 100 bytes  = 2000000 bytes  No 'deep' dives  Haulout: 3000 x 16 bytes = 48000 bytes  6-hour summaries in groups of 3 (450 days): 600 x 68 bytes = 40800 bytes  No berniegrams  No timelines  Cruise: 3000 x 16 bytes = 48000 bytes  No diving periods  No spot depths  No emergence records  No Duration histograms  No Max depth histograms</p>
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	<p>CTD casts (500 days): 2000 x 164 bytes = 328000 bytes No GPS fixes</p> <p>TOTAL 2407 kb (from 6333 kb available)</p> <p>PAGE CONTENTS (256 bits - 9 overhead):</p> <p>PAGE 0:</p> <p>PTT NUMBER OVERHEAD (28-bit code) -----[8 bits: 0 - 7]</p> <p>PAGE NUMBER -----[3 bits: 8 - 10]</p> <p>DIAGNOSTICS in format 0:</p> <p>TX number: wraparound 11 bits in units of 32 (range: 0 to 65504 ) -----[11 bits: 11 - 21]</p> <p>DIVE group in format 0: Normal dives transmitted in groups of 3 Time of start of last dive: max 5 days 12 hours @ 30 secs= 15840 ) tx as raw 14 bits in units of 1 (range: 0 to 16383 ) (recommended sell-by 5 days 11 hours) Sell-by range: 5 days Number of records: raw 2 bits in units of 1 (range: 0 to 3 ) Reason for end: -- not transmitted -- Group number: wraparound 8 bits in units of 1 (range: 0 to 255 ) Max depth: -- not transmitted -- Dive duration: odlog 1/6 in units of 30 s (range: 0 to 5715 s) Mean speed: -- not transmitted -- Profile data (4 depths/times, 0 speeds): Depth profile: odlog 2/6 in units of 25 dm (range: 0 to 23887.5 dm) Profile times: raw 5 bits in units of 32.2581 permille (range: 0 to 1000 permille) Speed profile: -- not transmitted -- Residual: raw 2 bits in units of 60 (range: 0 to 180 ) Calculation time: -- not transmitted -- Surface duration: odlog 2/4 in units of 2.5 s (range: 0 to 588.75 s) cf. cruise starts after 9 mins (540 secs) Dive area: -- not transmitted -- -----[225 bits: 22 - 246]</p> <p>Available bits used exactly === End of page 0 ===</p> <p>PAGE 1:</p> <p>PTT NUMBER OVERHEAD (28-bit code) -----[8 bits: 0 - 7]</p> <p>PAGE NUMBER -----[3 bits: 8 - 10]</p> <p>DIAGNOSTICS in format 1:</p> <p>Max depth ever: odlog 1/4 in units of 500 dm (range: 0 to 23250 dm) -----[5 bits: 11 - 15]</p>
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	<p>15 )</p> <p>CRUISE group in format 0:  Number of records: raw 1 bits in units of 1 (range: 0 to 1 )  Cruise number: wraparound 4 bits in units of 1 (range: 0 to 15 )</p> <p>Start time: -- not transmitted --  End time: max 5 days 12 hours @ 2 mins= 3960  tx as raw 12 bits in units of 1 (range: 0 to 4095 )  (recommended sell-by 5 days 11 hours)  Sell-by range: 5 days 4 hours  Duration: raw 9 bits in units of 120 s (range: 0 to 61320 s)  cf. Max duration is 16 hours  Speed: -- not transmitted --  Reason for end: -- not transmitted --  -----[26 bits: 16 - 41]</p> <p>to 7 )</p> <p>HAULOUT in format 0:  Number of records: raw 1 bits in units of 1 (range: 0 to 1 )  Haulout number: wraparound 3 bits in units of 1 (range: 0 to 7 )</p> <p>Start time: -- not transmitted --  End time: max 5 days 12 hours @ 2 mins= 3960  tx as raw 12 bits in units of 1 (range: 0 to 4095 )  (recommended sell-by 5 days 11 hours)  Sell-by range: 5 days 4 hours  Duration: raw 9 bits in units of 120 s (range: 0 to 61320 s)  cf. Max duration is 16 hours  Reason for end: -- not transmitted --  Contiguous: -- not transmitted --  -----[25 bits: 42 - 66]</p> <p>SUMMARY group in format 0:  Transmitted in groups of 3  Record could be in buffer for 7 days 12 hours  End time: max 7 days @ 6 hours= 28  tx as raw 5 bits in units of 1 (range: 0 to 31 )  (recommended sell-by 6 days 17 hours)  Sell-by range: 7 days  Number of records: raw 1 bits in units of 1 (range: 0 to 1 )  Cruising time: -- not transmitted --  Haulout time: raw 6 bits in units of 15.873 permille (range: 0 to 1000 permille)  Dive time: raw 6 bits in units of 15.873 permille (range: 0 to 1000 permille)  Deep Dive time: -- not transmitted --  Normal dives:  Avg max dive depth: odlog 2/6 in units of 25 dm  (range: 0 to 23887.5 dm)  SD max dive depth: odlog 2/4 in units of 50 dm  (range: 0 to 11775 dm)  Max max dive depth: odlog 2/6 in units of 25 dm  (range: 0 to 23887.5 dm)  Avg dive duration: odlog 1/6 in units of 30 s  (range: 0 to 5715 s)  SD dive duration: odlog 1/4 in units of 60 s  (range: 0 to 2790 s)  Max dive duration: odlog 1/6 in units of 30 s  (range: 0 to 5715 s)  Avg speed in dive: -- not transmitted --  Number of dives: odlog 1/4 in units of 2 (range: 0 to 93 )</p> <p>Deep dives:  Avg max dive depth: -- not transmitted --  SD max dive depth: -- not transmitted --  Max max dive depth: -- not transmitted --  Avg dive duration: -- not transmitted --  SD dive duration: -- not transmitted --  Max dive duration: -- not transmitted --  Avg speed in dive: -- not transmitted --  Number of dives: -- not transmitted --  Avg SST: -- not transmitted --  -----[180 bits: 67 - 246]</p>
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Available bits used exactly  
=== End of page 1 ===

PAGE 2:

PTT NUMBER OVERHEAD (28-bit code)  
-----[8 bits: 0 - 7]

PAGE NUMBER  
-----[3 bits: 8 - 10]

CTD in format 0:

End time: max 7 days @ 10 mins= 1008  
tx as raw 10 bits in units of 1 (range: 0 to 1023 )  
(recommended sell-by 6 days 23 hours)

Sell-by range: 6 days 18 hours

CTD cast number: -- not transmitted --

Min pressure: -- not transmitted --

Max pressure: raw 10 bits in units of 2 dbar (range: 6 to 2052 dbar)

Min temperature: raw 15 bits in units of 1 (range: 2500 to 35267 = -2.5 to 30.267 °C in steps of 0.001 °C)

Max temperature: raw 15 bits in units of 1 (range: 2500 to 35267 = -2.5 to 30.267 °C in steps of 0.001 °C)

cf. Valid temperatures: -2.5 to 30.2 degC

Min salinity: raw 12 bits in units of 2 mPSU (range: 28900 to 37090 mPSU)

Max salinity: raw 12 bits in units of 2 mPSU (range: 28900 to 37090 mPSU)

cf. Valid salinity: 28.9 to 37.1

Number of samples: -- not transmitted --

9 profile points 0 to 8 (from total of 17 cut points):

First 8 pressures are fixed

Min pressure is fixed

Temperature: raw 10 bits in units of 0.977517 permille (range: 0 to 1000 permille)

Temperature residual: -- not transmitted --

Salinity: raw 8 bits in units of 3.92157 permille (range: 0 to 1000 permille)

Salinity residual: -- not transmitted --

Temperature bounds : -- not transmitted --

Conductivity bounds : -- not transmitted --

Salinity bounds : -- not transmitted --

-----[236 bits: 11 - 246]

Available bits used exactly  
=== End of page 2 ===

PAGE 3:

PTT NUMBER OVERHEAD (28-bit code)  
-----[8 bits: 0 - 7]

PAGE NUMBER  
-----[3 bits: 8 - 10]

CTD in format 1:

End time: max 7 days @ 10 mins= 1008  
tx as raw 10 bits in units of 1 (range: 0 to 1023 )  
(recommended sell-by 6 days 23 hours)

Sell-by range: 6 days 18 hours

CTD cast number: -- not transmitted --

Min pressure: -- not transmitted --

Max pressure: -- not transmitted --

Min temperature: -- not transmitted --


Max temperature: -- not transmitted --

cf. Valid temperatures: -2.5 to 30.2 degC

Min salinity: -- not transmitted --

Max salinity: -- not transmitted --  
 cf. Valid salinity: 28.9 to 37.1  
 Number of samples: -- not transmitted --  
 8 profile points 9 to 16 (from total of 17 cut points):  
 Max pressure is sent separately  
 7 pressure bins: raw 9 bits in units of 1 bin  
 (range: 0 to 511 bin)  
 Temperature: raw 10 bits in units of 0.977517  
 permille (range: 0 to 1000 permille)  
 Temperature residual: raw 7 bits in units of 1 mdegC per  
 sample (range: 0 to 127 mdegC per sample)  
 Pressure already sent  
 Salinity: raw 8 bits in units of 3.92157 permille  
 (range: 0 to 1000 permille)  
 Salinity residual: raw 7 bits in units of 1 mPSU per sample  
 (range: 0 to 127 mPSU per sample)  
 Temperature bounds : raw 2 bits in units of 1 lo/hi (range:  
 0 to 3 lo/hi)  
 Conductivity bounds : -- not transmitted --  
 Salinity bounds : raw 2 bits in units of 1 lo/hi (range: 0 to 3  
 lo/hi)  
 -----[235 bits: 11 - 245]  
  
 UNUSED  
 -----[1 bits: 246 - 246]  
  
 === End of page 3 ===  
  
 PAGE 4:  
 PTT NUMBER OVERHEAD (28-bit code)  
 -----[8 bits: 0 - 7]  
  
 PAGE NUMBER  
 -----[3 bits: 8 - 10]  
  
 CTD in format 2:  
  
 End time: max 3 days 6 hours @ 10 mins= 468  
 tx as raw 9 bits in units of 1 (range: 0 to 511 )  
 (recommended sell-by 3 days 5 hours)  
 Sell-by range: 3 days  
 CTD cast number: -- not transmitted --  
 Min pressure: -- not transmitted --  
 Max pressure: raw 10 bits in units of 2 dbar (range: 6 to  
 2052 dbar)  
 Min temperature: raw 15 bits in units of 1 (range: 2500 to  
 35267 = -2.5 to 30.267 °C in steps of 0.001 °C)  
 Max temperature: raw 15 bits in units of 1 (range: 2500 to  
 35267 = -2.5 to 30.267 °C in steps of 0.001 °C)  
 cf. Valid temperatures: -2.5 to 30.2 degC  
 Min salinity: raw 12 bits in units of 2 mPSU (range: 28900  
 to 37090 mPSU)  
 Max salinity: raw 12 bits in units of 2 mPSU (range: 28900  
 to 37090 mPSU)  
 cf. Valid salinity: 28.9 to 37.1  
 Number of samples: -- not transmitted --  
 9 profile points 0 to 8 (from total of 17 cut points):  
 First 8 pressures are fixed  
 Min pressure is fixed  
 Temperature: raw 10 bits in units of 0.977517  
 permille (range: 0 to 1000 permille)  
 Temperature residual: -- not transmitted --  
 Salinity: raw 8 bits in units of 3.92157 permille  
 (range: 0 to 1000 permille)  
 Salinity residual: -- not transmitted --  
 Temperature bounds : -- not transmitted --  
 Conductivity bounds : -- not transmitted --  
 Salinity bounds : -- not transmitted --  
 -----[235 bits: 11 - 245]

	<p>UNUSED -----[1 bits: 246 - 246]</p> <p>=== End of page 4 ===</p> <p>PAGE 5:</p> <p>PTT NUMBER OVERHEAD (28-bit code) -----[8 bits: 0 - 7]</p> <p>PAGE NUMBER -----[3 bits: 8 - 10]</p> <p>DIAGNOSTICS in format 2:</p> <p>Number of resets: wraparound 2 bits in units of 1 (range: 0 to 3 ) -----[2 bits: 11 - 12]</p> <p>CTD in format 3:</p> <p>End time: max 3 days 6 hours @ 10 mins= 468 tx as raw 9 bits in units of 1 (range: 0 to 511 ) (recommended sell-by 3 days 5 hours)</p> <p>Sell-by range: 3 days</p> <p>CTD cast number: -- not transmitted --</p> <p>Min pressure: -- not transmitted --</p> <p>Max pressure: -- not transmitted --</p> <p>Min temperature: -- not transmitted --</p> <p>Max temperature: -- not transmitted -- cf. Valid temperatures: -2.5 to 30.2 degC</p> <p>Min salinity: -- not transmitted --</p> <p>Max salinity: -- not transmitted -- cf. Valid salinity: 28.9 to 37.1</p> <p>Number of samples: -- not transmitted --</p> <p>8 profile points 9 to 16 (from total of 17 cut points): Max pressure is sent separately 7 pressure bins: raw 9 bits in units of 1 bin (range: 0 to 511 bin)</p> <p>Temperature: raw 10 bits in units of 0.977517 permille (range: 0 to 1000 permille)</p> <p>Temperature residual: raw 7 bits in units of 1 mdegC per sample (range: 0 to 127 mdegC per sample)</p> <p>Pressure already sent</p> <p>Salinity: raw 8 bits in units of 3.92157 permille (range: 0 to 1000 permille)</p> <p>Salinity residual: raw 7 bits in units of 1 mPSU per sample (range: 0 to 127 mPSU per sample)</p> <p>Temperature bounds : raw 2 bits in units of 1 lo/hi (range: 0 to 3 lo/hi)</p> <p>Conductivity bounds : -- not transmitted --</p> <p>Salinity bounds : raw 2 bits in units of 1 lo/hi (range: 0 to 3 lo/hi)</p> <p>-----[234 bits: 13 - 246]</p> <p>Available bits used exactly</p> <p>=== End of page 5 ===</p>
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<b>Deployment</b>		
<b>Immobilisation</b>	<div> <div>Application</div> <div>Blowpipe dart 15ml, 80/2mm needle</div> </div> <div> <div>Induction dose</div> <div>14:29 13ml Zoletil IM@100mg/ml</div> </div> <div> <div>Top-up dose</div> <div>---</div> </div> <div> <div>Induction complete</div> <div>14:53</div> </div> <div> <div>Follow-up dose</div> <div>---</div> </div> <div> <div>Deployment</div> <div>14:55 - 15:30</div> </div> <div> <div>Onset of recovery</div> <div>15:45</div> </div> <div> <div>End of recovery</div> <div>16:03</div> </div> <div> <div>Anesthesia level</div> <div>4</div> </div> <div> <a href="http://doi.pangaea.de/10.1594/PANGAEA.737045">http://doi.pangaea.de/10.1594/PANGAEA.737045</a> </div>	
<b>Comment</b>	<div> <div>Seal tag:</div> <div>none</div> </div> <div> <div>Deployment site:</div> <div>Refugio elephante</div> </div> <div> <div>Prev. deployment:</div> <div>none</div> </div>	
<b>Tag deployed</b>	2010-04-07T14:29:00	-62.2559 -58.6271
<b>Tag retrieved</b>		
<b>First transmission</b>	2010-04-07T15:36:19	-62.257 -58.631
<b>Last transmission</b>	2010-08-20T01:01:20	-61.002 -43.373